

### **REMARKS**

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

#### **Claim Amendments**

Claim 2 has been amended to incorporate the limitations of claim 1, as a result of which claim 1 has been cancelled, without prejudice.

Claims 4 and 8 have been amended to include the steps of deprotecting the P<sup>11</sup> group of the compound (III), reducing the azide group to an amino group, protecting the amino group with an acetyl group, forming an oxazoline ring simultaneously with deprotecting a hydroxy group of a reducing terminal, and coupling with a protecting asparagines derivative after introducing a -N=C=S group at the reducing terminal. Support for these amendments is set forth in the scheme on page 13 of Applicants' specification.

Claim 5 has been amended to recite that the mannose disaccharide compound of formula (I) is prepared by hydrolyzing guar gum or galactomannan of formula (V). Support for this amendment is found on page 8, line 23 to page 9, line 3 of Applicants' specification.

New claims 11-14 have been added to the application. These claims correspond to originally filed claims 1-4, except that "polysaccharide having mannose  $\beta$ -1,4-bonds" has been replaced with "guar gum or galactomannan of the formula (V)", as also found in amended claim 5.

In order to expedite prosecution, and in accordance with the Examiner's request, further descriptions have been added into the claims for OH-protecting group, amino-protecting group, carboxyl protecting group, and leaving group. Support for these amendments is found on page 10, lines 14-16, page 12, line 2-4, the scheme on page 13 and page 11, lines 11-21 of Applicants' specification.

Changes of an editorial nature have also been made to the claims, in order to better comply with U.S. practice.

No new matter has been added to the application by the above-discussed amendments.

**Rejection of Claims Under 35 U.S.C. § 112, Second Paragraph**

The rejection of claims 1-10 as being indefinite under 35 U.S.C. § 112, second paragraph has been overcome by the claim amendments, discussed above.

Specifically, in order to expedite prosecution, the terms OH-protecting group, amino-protecting group, carboxyl-protecting group and leaving group have been more clearly defined based on the specification.

Additionally, the language “coupling of the reducing terminal of the trisaccharide compound above with the protected asparagines derivative” has been deleted from claim 4. Furthermore, claims 4 and 8 have been amended to incorporate additional steps, in order to expedite prosecution and to address the Examiner’s concerns, as discussed above.

Therefore, the rejection under 35 U.S.C. § 112, second paragraph is untenable and should be withdrawn.

**Patentability Arguments**

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

**Rejection Under 35 U.S.C. § 102(b)**

The rejection of claim 5 under 35 U.S.C. § 102(b) as being anticipated by Boleman et al. (Carbohydrate Research 312) is respectfully traversed.

*The Examiner's Position*

The Examiner takes the position that Bolem et al. teach D-mannobiose octaacetate obtained by acetylation of a mannose-mannobiose mixture, which was obtained from a mannanase digest of ivory nut mannan.

*Applicants' Arguments*

However, as discussed above, Applicants have amended claim 5 to amend a "polysaccharide having mannose  $\beta$ -1,4-bonds" to "guar gum or galactomannan of the formula (V)". Bolem et al. fail to describe a method for preparing mannobiose from guar gum or galactomannose of the formula (V). Thus, Bolem et al. fail to describe each and every limitation of Applicants' amended claim 5, as is required for an anticipation rejection.

For these reasons, the invention of claim 5 is clearly patentable over Bolem et al.

*Rejection Under 35 U.S.C. § 103(a)*

The rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Usui et al. (Glycoconjugate Journal) in view of Bolem et al. is respectfully traversed.

*The Examiner's Position*

The Examiner takes the position that Usui et al. teach the production of a common synthetic intermediate from mannobiose. The Examiner admits that Usui et al. do not teach a process of producing mannobiose comprising hydrolyzing a polysaccharide and protecting the OH groups of the resulting hydrolysate. The Examiner states that Bolem et al. teach this requirement, and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the intermediate using D-mannobiose obtained by the method of Bolem et al.

*Applicants' Arguments*

This rejection has been rendered moot in view of the cancellation of claim 1. However, Applicants discuss new claims 11-14, which correspond to original claims 1-4, but incorporate the new limitation set forth in claim 5, i.e. replacing “polysaccharide having mannose  $\beta$ -1,4-bonds” with “guar gum or galactomannan of the formula (V)”.

For the reasons discussed above with respect to the anticipation rejection, Bolem et al. fail to describe a method for preparing mannobiose from guar gum or galactomannose of the formula (V). Thus, Bolem et al. fail to teach or suggest the limitations of Applicants' new claims 11-14

For these reasons, the invention of new claims 11-14 is clearly patentable over Usui et al. and Bolem et al.

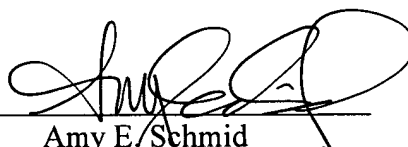
**Conclusion**

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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March 26, 2008